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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,938

01/09/2006

Karel H Leffelaar

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KRATON POLYMERS U.S. LLC
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EXAMINER

DUCHENEAUX, FRANK D

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

04/24/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

kratonip@kraton.com

Office Action Summary	Application No. 10/538,938	Applicant(s) LEFFELAAR ET AL.	
	Examiner FRANK D. DUCHENEAUX	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25,33 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25,33 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/19/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's arguments, see page 2, filed 2/18/2009, with respect to the abstract objection have been fully considered and are persuasive. The objection of the abstract has been withdrawn.

Examiner Notes

The examiner acknowledges cancellation of claims 1-24 and 26-32 of the present application as annotated on page 4, lines 5-8 of the remarks section.

The examiner notes that subject subheading on page 4 of the remarks section appears to be a misprint as it reads "REJECTION UNDER 35 U.S.C. 102." No rejections were made under this statute in the First Office action of the present application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claim 25 and 33-34** are rejected under 35 U.S.C. 103(a) as being obvious over Lechat et al. (International Publication No. WO 02/00806 A2) in further view of Delme et al. (International Publication No. WO 02/00787 A1).

Regarding claims 25 and 33-34, the applicant(s) claim packaging tapes comprising an *adhesive composition* that comprises:

a)

i) a *linear tetrablock copolymer S-I-S-I'*, of predominantly styrene(S) and isoprene (I and I') having an *apparent* molecular weight in the range of from 205,000 to 225,000.

ii) wherein *both* predominantly poly(styrene) blocks have an *apparent* molecular weight of from 10,000 to 12,000.

iii) wherein the *intermediate* S-I diblock copolymer has an *apparent* molecular weight in the range of from 130,000 to 185,000.

iv) wherein the *intermediate* S-I-S triblock copolymer has an *apparent* molecular weight in the range of from 145,000 to 195,000.

v) wherein the *poly(styrene) content* is in the range of from 14 to 16 wt%;

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b) at least one tackifying resin in an amount of from 50 to 150 parts by weight per 100 parts by weight of block copolymers;

c) optionally a naphthenic or paraffinic oil in an amount of from 0 to 50 parts by weight per 100 parts by weight of block copolymers; and

d) optionally an antioxidant and/or other auxiliaries, in an amount from 0.1 to 10 parts by weight per 100 parts by weight of block copolymer.

Lechat teaches *adhesives* with improved die-cutting performance (title) comprising a *tackified styrenic* block copolymer, the copolymer comprising a *tetrablock* copolymer which is used as a *hot melt* (page 6, lines 5-7 and lines 10-11) and that the tetrablock copolymers are preferably composed of styrenic blocks (S) and polyisoprene blocks (I) in an *SISI* configuration (page 6, lines 21-23). Lechat continues to teach that the tetrablock copolymers have an average molecular weight of from 51,000 to 270,000 and that the styrenic blocks have a molecular weight of at least 8,000 and at most 20,000 (page 7, lines 24-25). Lechat further teaches that the isoprene blocks have a molecular weight of at least 15,000 and at most 150,000 or at least 20,000 and at most 80,000 (page 7, lines 30-31) and that the tetrablock copolymer contains a *styrene content* of from 10-27 wt% (page 6, lines 6-7).

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Lechat teaches that inventive adhesive *tackifiers* are used (page 9, lines 29-30) including resins (page 10, lines 23-25) and that the tackifier is present from 50% based on the total weight of tackifier and copolymer (page 10, lines 29-30).

Lechat also teaches that the inventive additives include *plasticizer oils* such as SHELLFLEX 317 (a *naphthenic oil*) (page 10, lines 25-26) and that adhesive formulations contain well-known additives such as *antioxidants* (page 15, lines 20-21), wherein an embodiment of the invention recites 0.4wt% of Irganox 1076 (*antioxidant*) was added (page 19, lines 5-6).

The teachings of Lechat render obvious the invention as claimed by applicant considering that the ranges for the molecular weight(mw) for the SISI tetrablock copolymer (51,000 – 270,000); that for the styrene blocks (8,000-20,000) and the isoprene blocks (15,000-150,000 or 20,000-80,000); and that for the SI (23,000 – 170,000) and SIS (31,000-190,000) intermediates, as taught by Lechat, encompass the molecular weight ranges as claimed by applicant ($SISI_{mw} = 205,000-225,000$; $S_{mw} = 10,000-12,000$; $SI_{mw} = 130,000-185,000$; $SIS_{mw} = 145,000-195,000$; and $SIS_{mw} = 147,000$ to $193,000$ and $SI_{mw} = 135,000$ to $184,000$ (new claim 33); and middle $I_{mw} = 125,000$ to $172,000$ and terminal $I_{mw} = 22,000$ to $64,000$ (new claim 34)). Additionally, Lechat teaches the ranges of the wt% for the styrene between 10-27%, which encompasses the ranges as claimed by applicant(s). Furthermore, the applicant(s) claim that at least one tackifying resin is in an amount of 50 to 150 parts by weight per 100 parts by weight of copolymer is rendered obvious by Lechat teaching that the tackifier is present from 50% based on the total weight of tackifier and copolymer.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the result effective variables (e.g. molecular weights of isoprene content to

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vary the copolymer flexibility) to obtain adhesive compositions with predictable qualities. See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Lechat fails to teach that said SISI block copolymers are *linear*. However, Delme teaches *linear SISI tetrablock copolymers* (page 2, lines 7-8) and that said copolymers are particularly useful due to their flowability (page 3, lines 2-3). Lechat teaches need for an adhesive to flow away from the cut point and not reform over the cut line (page 4, lines 9-11) and that the more readily the adhesive flows the easier and cleaner the cut will be (page 5, lines 25-26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to configure the elastomeric (copolymers) component of the adhesive as taught by Lechat in the linear configuration as taught by Delme towards improving an adhesive composition for a packaging tape that would provide the tape with a more efficient severance.

Response to Arguments

5. Applicant's arguments filed 2/18/2009 have been fully considered but they are not persuasive. Applicants submit that the **Lechat** reference, either alone or in view of the **Delme** reference, does not disclose or suggest the present claims and that no prima facie case of obviousness can be established (page 5 and again on page 6, lines 27-29 and page 7, lines 1-5). The examiner maintains the rejections as annotated above. Examiner's response to arguments is outlined below.

i) Applicant's argue that it can be seen that while the S block is from 10,000 to 12,000, the interior block I has a much higher molecular weight which could be from about 118,000 to about

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175,000 based on the ranges recited in claim 25 and as such, that interior block I is a much larger block than the S block (page 5, lines 4-8).

Referring to the rejections above, it is noted that Lechat teaches SISI tetrablock copolymers with an average molecular weight (Mw) of from 51,000 to 270,000 and the styrenic blocks have a Mw of at least 8,000 and at most 20,000. Further, Lechat teaches that the isoprene blocks have a Mw of at least 15,000 and at most 150,000 or at least 20,000 and at most 80,000 and that the SI intermediate block Mw range from 23,000 to 170,000. Lechat clearly renders obvious an interior I block much larger than said S block considering an I block of at most 150,000 and an S block of at most 20,000. The examiner notes that, in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists (In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)).

ii) Applicants additionally argue that as the apparent molecular weight of the entire block copolymer S—I—S—I' is in the range of from 205,000 to 225,000 it can be seen that the exterior I' block is smaller than the interior block I (page 5, lines 9-11).

Referring to the rejections above and the restatement of said rejections in subsection i) of the present Office Action, Lechat teaches the Mw of the SISI tetrablock is 270,000 comprising an SI intermediate block with a Mw of at most 170,000 and an SIS intermediate with a molecular weight of at most 190,000 which demonstrates an interior S block with a Mw of at most 20,000, which yields an exterior I block of 80,000. Clearly, Lechat renders obvious an exterior I block

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smaller than the interior I block as in the present claims. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists (In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)).

iii) In new dependent claim 33, applicants further their argument as restated by the examiner in subsection section ii) above of the present Office Action, wherein it is recited: wherein the middle block I has an apparent molecular weight from 125,000 to 172,000 and the terminal I' block has an apparent molecular weight of from 22,000 to 64,000 and so accordingly, it can be seen that the I' block is a small tail at the end of the SISI' block copolymer in comparison to the middle block I (page 5, lines 12-16).

Referring to the rejections above and the restatement of said rejections in i) of the present Office Action, the ranges of the Mw for the SISI tetrablock copolymer, the S and I blocks, the SI intermediate and the SIS intermediate as taught by Lechat render obvious the ranges of the middle block I and the terminal block I' as in the present invention. For example, the ranges of the reference teaches the following tetrablock copolymer and its constituent blocks:

$$Mw_{SISI} = Mw_{SIS} + Mw_I$$

$$Mw_{SISI} = Mw_{SI} + Mw_S + Mw_I$$

$$Mw_{SISI} = Mw_S + Mw_I + Mw_S + Mw_I$$

$$225,000 = 20,000 + 150,000 + 20,000 + 35,000$$

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whereby the values of the interior and exterior I blocks (150,000 and 35,000, respective) find full support in the previous rejections of claim 25. The examiner notes that, in the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists (In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)). The examiner further notes that the ranges recited on page 5, lines 12-16 of the applicants’ arguments pertain to new dependent claim 34 (see page 3 of applicants’ Response to Office Action) and not to new dependent claim 33 as argued.

iv) The applicants argue that the **Lechat** reference does not disclose or suggest such a block copolymer as in the present claims and that while **Lechat** does disclose a tetrablock and/or pentablock which may have a number average molecular weight of 45,000 to 250,000, or alternatively, 100,000 to 170,000, and further discloses that the butadiene and/or isoprene blocks have a molecular weight of at least 10,000 g/mole, and at most 200,000, **Lechat** discloses that the exterior diene block is larger than the interior diene block. Applicants’ arguments additionally cite a passage from the Lechat reference wherein it is stated that “Polymers in which the internal block has a Mw less than the end block are particularly useful. Some invention copolymers have an internal unsaturated block with a molecular weight in the range 20,000 to 70,000, alternatively 25,000 to 50,000 and the external block has a molecular weight above 40,000, alternatively above 60,000, when it is a B block, and above 55,000, alternatively above 75,000, which it is an I block,” Applicants state that this cited portion of **Lechat** shows that the block copolymer is completely different than that claimed as the exterior diene block is larger

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than the interior diene block, especially when the diene is isoprene (page 5, lines 17-30 and page 6, lines 1-3).

The examiner notes that Lechat merely states that some of invention copolymers possess the Mw distribution as cited by the applicants, which denotes that not all of the invention copolymers necessarily do. In addition, Lechat's disclosure that copolymers with such a Mw distribution are particularly useful does not negate the utility of copolymers comprising distributions different from said distributions. Further, "nonpreferred disclosures can be used. A nonpreferred portion of a reference disclosure is just as significant as the preferred portion in assessing the patentability of claims." In re Nehrenberg, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). In addition, a fair reading of the reference as a whole clearly disclose values for the Mw of the external and internal I blocks that overlap that presently claimed. Further, it is noted that with respect to page 8 of Lechat cited by applicants, even in the preferred embodiment, given that the interior I block has a Mw of 20,000 to 70,000 and the exterior I block has a Mw of greater than 55,000, embodiments are included where the Mw of the exterior I block is smaller than the Mw of the interior I block, i.e. for instance when interior I block has a Mw of 70,000 and the exterior I block has a Mw of 60,000.

v) On page 6, lines 4-13, the applicants argue that Lechat discloses that the interior diene block is from 20,000 to 70,000, which falls outside of the claimed range for the interior I block and also assert in reference to claim 25, that the molecular weight [is] in the range of from 130,000 to 185,000. Applicants further repeat their argument that, as recited in claim 33 the middle block I

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has an apparent molecular weight from 125,000 to 172,000. Applicants repeat the argument that **Lechat** discloses the end diene block is above 75,000 when Isoprene while the claimed range for the terminal I' block is from 22,000 to 64,000 and therefore the end block of Lechat is clearly outside the range of claim 33.

The examiner refers the applicants to subsections i-iv of the current action as the examiner believes that arguments put forth by the applicants in the current subsection have been fully addressed in the previous subsections. The examiner notes that the ranges recited in applicants' arguments of 125,000 to 172,000 and 22,000 to 64,000 are not required by the limitations of claim 33. In addition, the examiner believes that applicants' arguments which state, "As noted above, in claim 25, the molecular weight in the range of from 130,000 to 185,000," on lines 5-6 on page 6 are incomplete as said range in said claim refers to the Mw of the SI intermediate and not to an interior diene block.

vi) Applicants argue that the examples provided in **Lechat** demonstrate a much smaller interior diene block than that of the present claims and that these same examples show a larger exterior diene block than the interior diene block as in Example 2, wherein an SISI tetrablock is disclosed having an interior I block of 60,000, which is outside the present claims, and an exterior I block of 70,000, which is clearly outside the range of claim 33 and the exterior I block is larger than the interior I block; and in example 3, wherein the exterior I block (Mw = 91,400) is three times the size of the interior I block (Mw = 30,450) and that said interior I block is outside the range of

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the instant claims, and additionally that the exterior I block is larger than that claimed in claim 33, namely 22,00 to 64,000 (page 6, lines 14-26).

Regarding applicants' arguments, the examiner points to the previous response to arguments annotated above in the current action and additionally, notes that "applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others." (In re Courtright, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967)).

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANK D. DUCHENEAUX whose telephone number is (571)270-7053. The examiner can normally be reached on M-Th, 7:30 A.M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie E. Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FDD

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794

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